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09/886,548	06/21/2001	Matthew B. Dubin	H0002057	7279

7590

06/09/2003

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EXAMINER

CARIASO, ALAN B

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 06/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/886,548

Applicant(s)

DUBIN ET AL.

Examiner

Alan Cariaso

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20,23,25 and 38 is/are allowed.
- 6) ☒ Claim(s) 1-19,21,22,24,26-31,34,36,37,39 and 40 is/are rejected.
- 7) ☒ Claim(s) 32,33 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 3, 9, 11 and 28 are rejected under 35 U.S.C. 102(b) as being anticipated by SEITZ (US 1,617,423).

3. SEITZ discloses a housing structure (A,H-fig.2); at least one light source (F) arranged inside the housing structure (A,H); a prism (K) having an input face (face of K adjacent to light source F), an output face (face adjacent M), and a transfective face (the sloped face of prism K in fig.2 that is plane-parallel to the pocket surface L of casing H) to receive, distribute, and direct light emitted by the light source (F) which is external of the prism (K); and a lens (N) through which emitted light passes (via cut openings in O; col.1,lines 71-77), wherein the lens (N) is engaged with the housing structure (A,H-figs.1,2) and light emitted by the light source (F) is capable of passing through the lens; further comprising an alignment guide (socket B with holder of inner casing H) for aligning the light source (F) to direct the light source; wherein the at least

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one light source comprises a plurality of light sources (F,G); wherein the light sources (F,G) comprise a plurality of angular distributions of light (horizontal via N, angular range of light through J, and downward via R); given the apparatus of SEITZ, the process steps of claim 28 are anticipated and/or inherent, the steps including providing the housing structure, placing the light source at the housing structure, applying electrical current to the light source, receiving, distributing and directing light by means of the prism, and passing light through the lens.

4. Claims 1-3, 9, 11, 14, 17, 26-30, 39 and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by SASAKI (US 5,769,532).

5. In regards to claims 1, 3, 9, 11, 14, 17, 28 and 30, SASAKI discloses a housing structure (globe 4); at least one solid state light source (LEDs 1) arranged inside the housing structure (4); a prism (3) having an input face (face adjacent to light sources 1), an output face (face pointed by 3), and a transfective face (31) to receive, distribute, and direct light emitted by the light source (1) which is external of the prism (3); and a lens (41) through which emitted light passes, wherein the lens (41) is engaged with the housing structure (4, col.4, lines 5-10) and light emitted by the light source (1) is capable of passing through the lens (41); further comprising an alignment guide (33) for aligning the light source (1) to direct the light source; wherein the at least one light source comprises a plurality of light sources (1); wherein the light sources (1) comprise a plurality of angular distributions of light (col.2, lines 52-56 or in a broader interpretation is defined by plural angular positions of the LEDs 1 about the vertical or longitudinal

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axis); further comprising a second prism (the top half of prism 3 with the first prism being the bottom half) within the housing structure (4) having an input face, an output face and transfective face (fig.1); given the apparatus of SASAKI, the process steps of claims 28 and 30 are anticipated and/or inherent, the steps including providing the housing structure, placing at least one (solid state) light source at the housing structure, applying electrical current to the light source, receiving, distributing and directing light by means of the prism, passing light through the lens, and providing and arranging a second prism having an input face, output face and transfective face.

6. As for phrase "wherein a first portion of the light emitted from said light source undergoes total internal reflection at said transfective face of said prism and a second portion of the light emitted from said light source is transmitted through said transfective face, the combination of said first and second portions of light producing a light pattern with a sharp angular cutoff broadly corresponding to the critical angle for said total internal reflection at the transfective face" recited in claims 2, 26, 29 & 39 and the phrase "wherein the light emitted from said light source forms a continuum of incident angles of light on said transfective face such that some light exceeds the critical angle of total internal reflection for said prism, some light is at the critical angle of said prism, and some light does not exceed the critical angle of said prism" recited in claims 27 & 40, any recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a

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process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over SASAKI (US 5,769,532) in view of RONEY et al (US 5,528,474).

SASAKI discloses applicant's invention except means for carrying away heat generated by the light source. RONEY teaches a heat sink (copper layer 26 and traces 29) and conductive medium (14) as part of LED positioning guide (20) for the purpose of carrying away heat generated by the light source. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the LED device of SASAKI to include a heat sink and conductive medium as taught by RONEY in order to dissipate heat from the light source.

9. Claims 5-8, 10, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over SASAKI (US 5,769,532) in view of WALTZ et al (US 5,450,301).

10. SASAKI discloses applicant's invention except: a means for controlling the amount of electrical current applied to the light source; the current control means being located in one of inside the housing structure and remotely from the housing structure; means for modulating the intensity of the lights source; the light source being one of green, red and white light; the light source being a plurality of colors; the light sources being electrically connected in series or series-parallel.

11. WALTZ teaches a circuit (figs.1,2) LEDs represented as display element (14) used in signal lights (col.1) having a resistor (26) located inside the display apparatus (10,12) for the purpose of limiting current supplied to the diodes (30) (col.2, lines 37-38). WALTZ teaches a triac power controller (16) at least located remote from the display apparatus (fig.1) for the purpose of modulating the intensity of the light source (col.2, lines 30-34). WALTZ teaches various colors of LEDs including green and red (col.2, lines 60-65) for the purpose of producing visible display light with the most intensity. WALTZ teaches LED assemblies (30) electrically connected in series and diodes (32,34) electrically connected in series-parallel (fig.2) for the purpose of simultaneously energize all the light sources.

12. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the signal-display LED device of SASAKI to include a current limiter as taught by WALTZ et al in order to prolong the life of the LEDs; to include a triac power controller as taught by WALTZ in order to modulate the intensity of the light source; to include green and red colored LEDs as taught by WALTZ in order to

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display light with the most intensity; and to include series or series-parallel connection of the LEDs as taught by WALTZ in order to simultaneously energize them.

13. Claims 1-3, 5-10, 14, 15, 17, 24, 26-³⁰~~29~~, 36, 37, 39 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over SHAW et al (US 6,419,372) in view of KALMANASH (US 5,211,463).

14. SHAW discloses a housing structure (110 or 210); at least one solid state light source (LEDs 140 or 230,225 or 320,325,327) arranged inside the housing structure (110 or 210, 310); a prism (150) with second prism (250) each having an input face (face adjacent 260,230), an output face (top face of 250), and a transfective face (wedge face opposite top face of 250, adjacent 255) to receive, distribute, and direct light emitted by the light source (230,225) which is external of the prism (150,250); and a lens (130) through which emitted light passes, wherein the lens (130) is part of the backlight (110) engaged with the housing structure (col.2, lines 26-28) and light emitted by the light source (140) is capable of passing through the lens (130); means (270,275) for controlling the amount of electrical current applied to the light source, located remotely from the housing structure (210) and includes means (275) for modulating the intensity of the light source; wherein the light source emits one of red and white (col.4, lines 20-24) and comprises a plurality of colors; further comprising an optical filter (260) between the light source (230) an input face of the prism (250); and alignment guide provided by the lights positioned and connected to circuit card 240. In regards to claims 2, 26, 27, 29, 39 and 40, the function or process by which light emitted by the

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light source into a first portion undergoing internal reflection and second portion transmitting through the transfective face of the prism creating a lighting pattern is considered to be inherent given the optical structure met by SHAW as claimed.

15. However, SHAW does not disclose the lens engaged with the housing structure.

KALMANASH teaches an avionics illuminated display device in the same field of endeavor including a lens (106-fig.6) engaged with a housing structure (104,98) enclosing the housing structure with the lens while allowing uniform light emission.

16. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the illuminated display device of SHAW et al to include the type of engagement between the lens and housing structure as taught by KALMANASH in order to enclose the lighting elements and prism therein.

17. Claims 16, 18, 19, 21, 22, 31 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over SHAW et al (US 6,419,372) in view of KALMANASH (US 5,211,463) as applied to claims 1-3, 5-10, 14, 15, 17, 24, 26-29, 36, 37, 39 and 40 above, and further in view of YAMADA et al (US 5,704,703).

18. SHAW modified by KALMANASH above discloses applicant's invention substantially as claimed except: a diffuser between the light source and the input face of the prism; flat or curved facets on the input face of each first and second prisms

19. YAMADA discloses a prism plate (57-fig.13A) between the light source (51) and the input face (52a) of prism (52) for the purpose of increasing the emission angle (fig.13B). YAMADA also teaches flat and curved facets (32a-fig.7; col.9, lines 11-14)

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formed on the input face of at least the first prism for the purpose of increasing the amount of light obtained (col.9, lines 19-28) in the prism.

20. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the illuminated display device of SHAW et al to include the type of prism plate and flat and curved facets at or formed on the input face of the prism as taught by YAMADA et al in order to increase the emission angle and amount of incident light from the light source(s).

Allowable Subject Matter

21. Claims 32, 33 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

22. Claims 20, 23, 25 and 38 are allowed.

Response to Arguments

23. Applicant's arguments filed April 02, 2003 have been fully considered but they are not persuasive.

24. Applicants allege that the prior art to at least SEITZ, SASAKI and SHAW fail to teach or suggest the following limitations of claims 1, 5, 14, 24-26, 28, 37 and 39: a position light having "a prism having an input face, an output face, and a transfective face to receive, distribute and direct light emitted by said light source"; a process for providing position lighting for an aircraft that relies upon a prism having a transfective

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face, an output face and an input face. Applicants further state that MAURER (US 4,161,770) and the prior art of record relied upon does not teach how to utilize both direct light emission and total internal reflection to produce the necessary sharp angular cutoff and the asymmetric lighting pattern needed for aircraft position lights, that the unique combinations of elements of the claimed invention of claims 1, 5, 14, 24, 26, 28, 37 and 39 do provide this advantageous effect. In regards to SEITZ, applicants state that a transfective surface within the structure of the prism (element K) was not identified in SEITZ. In regards to SASAKI and SHAW, applicants state that a transfective surface on the respective designated prism element has not been identified or that there is no transfective face.

25. In rebuttal, applicant is directed to paragraph 3 of the Office Action which identifies the transfective face as being the face adjacent L in SEITZ, more specifically the sloped face of prism K in fig.2 that is plane-parallel to the pocket surface L of casing H. The structure of the prism as claimed by applicant is anticipated by the prism K as disclosed by SEITZ because there are commonly three faces for input, output and transfectivity of light. The transfective ability of the sloped surface of prisms of either applicant's invention and SEITZ is relative to what light rays or image rays enter at which face and at what incident angles before reaching the sloped surface and depends on the slope angle of the slope surface. As for the adjacent pocket surface L of the casing H in SEITZ which appears to only reflect or block light traveling through the prism, this pocket surface L is not identified as the prism but the housing H. So, the prism as disclosed by SEITZ being a basic right triangle prism with the three claimed

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faces anticipates applicant's prism as broadly claimed. It appears that the sloped surface or face of the prism of SEITZ reflect light entering either opposing faces (depending on incident angles that would meet conditions that allow total internal reflection of those light rays) and transmit a portion of light (depending again on incident angles of the incoming light) to reach at least the pocket surface L.

26. With SASAKI, the transfective face of prism (3) is identified as the surface with figure reference numeral "31" in the Office Action. SASAKI discloses that the prism 3 structurally is made solely of light transmitting material (col.3, lines 10-15) and that its at least reflective ability of reflective surfaces 31 is based on the optical conditions of "inner-surface reflection" or total internal reflection (TIR) described in col.3, lines 19-35. The transmitting ability of sloped surface 31 is apparent in that prism 3 is made of a light transmitting material and depending on inherent various angles of light from arbitrary light source(s) outside the prism that have incident angles less than the critical angle. As for desired effect "to produce the necessary sharp angular cutoff and the asymmetric lighting pattern needed for aircraft position lights", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).

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27. In regards to SHAW, the transfective face is identified as the wedge face opposite the top face of 250, adjacent the air space 255. This transfective surface is suggested at least by the total internal reflection that occurs when light from LED 230 is guided and propagated outward towards the top output face. The light transmitting ability of the wedge surface is apparent by light transmitting through from the array of LEDs 225. Varying degrees of light transmission and reflection of a face of a prism is relative to the location of the light source(s) relative the prism and inherent varying angles of light paths from each light source entering and propagating through the prism or light guide. The structure as claimed by the applicant is adequately met as being anticipated and obvious by the prior art to at least SEITZ, SASAKI and SHAW as written in this Office Action. The rejection of these claims stand.

Conclusion

28. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

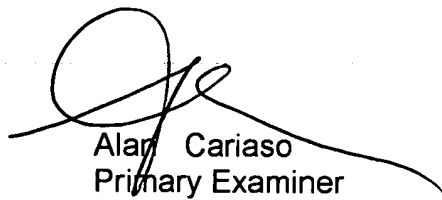
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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan Cariaso whose telephone number is (703) 308-1952. The examiner can normally be reached on M-F (9:00-5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (703) 305-4939. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)308-0956.



Alan Cariaso
Primary Examiner
Art Unit 2875

AC
June 4, 2003